

Product and Application

TruSTRENGTH 80 structural steel flats with 80 ksi yield strength. This product is intended for use in the agricultural, forestry and trailer chassis industries, and other structural applications requiring a combination of high strength, weldability and toughness.

Available in thickness 1/4" - 2", widths 3" - 12" and lengths up to 56'.

Mechanical Properties

| | |
|-------------------------|--|
| Yield Strength (0.2%) | 80 ksi (552 MPa) |
| Tensile Strength | 95 ksi (655 MPa) |
| Elongation in 8" | 14% |
| Charpy V-Notch @ -20° F | 15 ft-lbs (20.3 J) longitudinal |
| Methods | Mechanical tests in accordance with ASTM A370, latest revision |
| Frequency | Per heat, per size and per load |

* Minimum values unless otherwise noted.

Dimensional Tolerances

| | |
|----------------------------|-------------------------------|
| Cross-Sectional Dimensions | Per ASTM A6, Table 26 (flats) |
| Length | Per ASTM A6, Table 30 |
| Width | Per ASTM A6 |
| Straightness | 1/4" in 5' maximum deviation |

Chemical Composition

| | C | Mn | P | S | Si | V |
|----------------|------|------|-------|--|------|------|
| Min | 0.10 | 0.80 | - | - | 0.15 | 0.08 |
| Max | 0.24 | 1.65 | 0.040 | 0.040 | 0.35 | 0.18 |
| CE* (typical): | | 0.52 | | *CEV = C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15 | | |

80 Flat Bar

Recommended Welding Practices

TruSTRENGTH 80 flat bar can be welded by conventional processes such as SMAW, SAW and GMAW, provided the weld procedures used are suitable for this grade and design of the welded structure. Proper weld procedures should include the following:

1. Low Hydrogen conditions must be used.
2. Preheating to 200-500 °F is required for heavy section (>0.750"), and is recommended for thinner sections to eliminate moisture.
3. Slow cooling rates should be avoided to prevent low toughness in the heat-affected zone (HAZ).

*These statements are general guidelines. CMC Impact Metals is not responsible for the results of any welding work performed.

Standard Delivery Conditions

Test Reports Supplied with shipment for each production lot in the shipment. Reports include description of product and heat treatment processing, and heat number, heat treatment lot and chemical analysis of all elements listed from ladle analysis.